

British Columbia COVID-19 Situation Report for K-12 Schools

October 2021 Update



Key Findings

- Diagnosed cases of COVID-19 increased among 5-11 year-olds in British Columbia (BC) during the first two weeks of the school year, primarily in regions with lower community vaccine coverage. The case incidence within these younger age groups peaked in late September and is now trending downward.
- The increase of COVID-19 cases in September was strongly associated with a significant increase in testing among children. The increase in testing may be attributed, at least in part, to an increase in circulation of other respiratory viruses with similar symptom presentation.
- Serious outcomes from COVID-19 infections continue to be rare among all school-age children in BC. Among 12-17 year-old children who are eligible to be vaccinated, hospitalization is less common in youth who have at least 1 dose of vaccine compared to those who are unvaccinated. There have been no deaths in this age group in BC.
- Vaccination coverage among 12-17 year-old children continues to increase throughout BC, although there are differences across regions. By October 14, 2021, one-dose coverage among 12-17 year-old children was 82% and two-dose coverage was 73% provincially.
- Expanded public posting of potential exposures in Kindergarten to Grade 12 (K-12) schools was initiated for all regional health authorities on September 28, 2021. There have been 1,388 postings among 510 (27%) of schools provincially between September 7 and October 9, 2021 (some notifications were added retrospectively).
- **Regional Analysis:** Interior Health Authority reported 80 clusters where COVID-19 transmission may have occurred in the classroom setting during the first five weeks of the 2021-2022 school year. The clusters, which consist of two or more cases, were reported in 46 (12%) K-12 schools. Most of these clusters (median of 3 cases) were slightly larger than the average cluster size during the 2020-2021 school year.

									
Age group: 0-4		Age group: 0-4		Age group: 0-4		Age group: 0-4		K-12 Schools	
4,920	total cases	103	ever hospitalized	11	ever in critical care	2	total deaths	1,388	total notifications
204	new this week	3	new this week	1	current this week	0	new this week	507	new this week
Age group: 5-11		Age group: 5-11		Age group: 5-11		Age group: 5-11			
12,132	total cases	44	ever hospitalized	3	ever in critical care	0	total deaths		
877	new this week	1	new this week	0	current this week	0	new this week		
Age group: 12-17		Age group: 12-17		Age group: 12-17		Age group: 12-17			
11,575	total cases	45	ever hospitalized	7	ever in critical care	0	total deaths		
267	new this week	2	new this week	1	current this week	0	new this week		

o New cases and new deaths are net new between October 6 and October 13, 2021.
o New hospitalizations and critical care census numbers are as of October 12, 2021.
o School notifications are from September 7 to October 9, 2021, new this week is from October 3 to October 9, 2021.

Figure 1: Current summary of pediatric COVID-19 cases and school notifications in BC as of October 2021

Please note that the content of this report may change as more information becomes available.

Contents

A. Introduction	2
B. Vaccination	3
C. Cases and Testing	4
D. Severe Outcomes.....	7
E. Public Notifications of Potential Exposures in K-12 Schools	9
F. Regional Analysis of Interior Health Authority K-12 School COVID-19 Case Clusters	10
G. Data Sources and Notes.....	15
H. Additional Resources	15

A. Introduction

When COVID-19 spreads in a community, there is a risk that it will be introduced in the schools in that community. COVID-19 cases in schools typically reflect the number of cases in their communities.

The risk of COVID-19 in BC K-12 schools looks different this year: there are new variants of the virus that spread more easily, but there are also highly effective vaccines that are widely available to those aged 12 and older.

Increasing COVID-19 vaccine coverage among all eligible individuals aged 12 years and older is the most effective strategy to reduce the risk in K-12 schools during the 2021-2022 school year. While the majority of the eligible BC population has been vaccinated (89% first dose, 12+ years; and 83% both doses, 12+ years as of October 14, 2021), there are communities where immunization is much lower than the BC average. [Evidence](#) continues to demonstrate the strong protection provided by two doses of the COVID-19 vaccines available in BC, both against infection and severe disease. Not only does vaccination help protect the individual, it can also help protect others in the community, including younger children who are not yet eligible to be vaccinated.

Schools provide essential support for student academic, social, and emotional development. A previous [report](#) from the BCCDC outlined the importance of schools remaining open to support child and family wellbeing during the pandemic. According to the 2020 BC [COVID-19 Speak survey](#), 60% of households with children reported increased child stress, while 79% of households with children report decreased connection with friends amidst school closures and other pandemic response measures.

While there have been some changes to the public health guidance for K-12 schools for the 2021-2022 school year, many public health measures from last school year remain in effect. As of [August 25, 2021](#), the Provincial Health Officer mandated people 12 years and older to wear masks in indoor public settings, regardless of vaccination status. In response to increasing rates of COVID-19 among children under 12 years, the province updated its [public health and communicable disease guidance for K-12 schools](#) to require masks for kindergarten to Grade 3 students, effective [October 4, 2021](#). As of October 12, 2021, the provincial indoor masking requirement was extended to anyone aged 5 years and older. [Enhanced measures](#) have also been recommended in some regions with higher rates of COVID-19, such as Fraser Health, Interior Health, and Northern Health.

[During the 2020-2021 school year in BC](#), most cases of COVID-19 among students and staff were acquired outside of school, in their community or household. COVID-19 exposures at schools did not typically result in transmission. When they did, it was usually one or two other cases. While the experience from the last school year provided insight into how COVID-19 spread within the K-12 school environment, the emergence of the more transmissible Delta variant over the summer means that it is important to continue to monitor and respond as necessary to reduce the spread of COVID-19 in schools.

The purpose of this report is to provide a situational update on COVID-19 in BC K-12 schools since the start of the 2021-2022 school year.

B. Vaccination

Vaccine Coverage

Vaccines are the most effective way to reduce the risk of COVID-19. As part of the BC [vaccination strategy](#), starting May 2021, everyone 12 years and older became eligible to receive the vaccine. For those 12-17 years-old, as of October 14, 2021, the second dose coverage for BC was 73%, while first dose coverage was 83%. There was regional variation for second doses: Vancouver Coastal Health reported the highest health authority coverage (84%) while Northern Health reported the lowest (50%). There was greater variation among coverage rates at the Local Health Area level (LHA) within Northern Health and Interior Health compared to other health authorities (Figure 2).

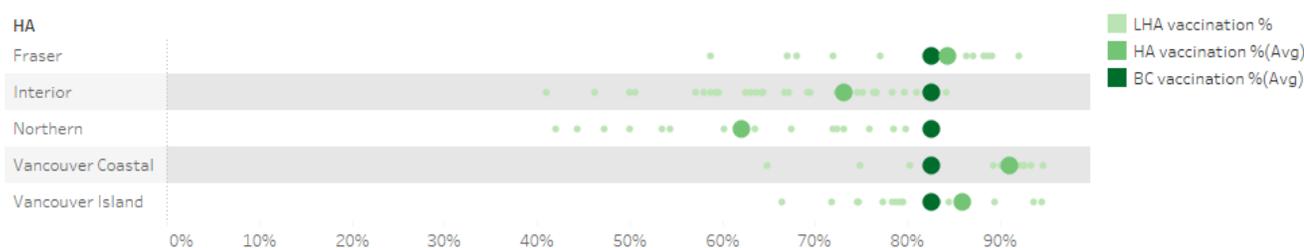


Figure 2: COVID-19 first dose vaccination coverage for 12-17 year-olds by Health Authority (HA) and Local Health Area (LHA), as of October 14, 2021

There are over 500,000 children under 12 years-old in BC who are ineligible to receive the COVID-19 vaccine at this time. In early October 2021 Pfizer submitted initial trial data for the use of its COVID-19 vaccine in children aged 5-11 to Health Canada. [Registration](#) is currently open for parents to register children aged 5-11, who may soon become eligible for vaccination.

Vaccine Safety

The COVID-19 mRNA vaccines available to youth in BC (Moderna Spikevax and Pfizer Comirnaty) are very safe and side effects are generally mild. Health Canada, the Public Health Agency of Canada, the provinces and territories, and manufacturers continue to closely monitor the safety of all COVID-19 vaccines through provincial and national reporting of adverse events.

Within [Canada](#), there were 451 adverse events following immunization¹ (AEFI) with COVID-19 vaccines (e.g., tingling or prickling, vaccination site pain, headache) reported among 12-17 year-olds as of October 1, 2021, which represents 12

¹ [AEFI general definition](#): any untoward medical occurrence which follows immunization and which does not necessarily have a causal relationship with the use of a vaccine.

reports per 100,000 doses administered. The 12-17-year age group experienced the lowest number and rate of reported AEFIs of any age group. Among all AEFIs reported to Health Canada, the majority were not serious.²

In BC, as of October 13, 2021, 13 cases of myocarditis/pericarditis have been reported among 12-17 year-olds following receipt of Pfizer Comirnaty, representing 27 cases per 1,000,000 Pfizer Comirnaty doses administered (95% confidence interval: 15.9-43.6).

C. Cases and Testing

Case Incidence

At the provincial level, the 7-day moving average COVID-19 case incidence rate among children under 12 years increased sharply in early September 2021, peaked during the week of September 26, 2021, and is now declining (Figure 3).

The case rates among the pediatric age groups have continued to trend down in recent weeks. The 5-8 and 9-11 year-old age groups have experienced the steepest decline compared to all other pediatric and adult age groups (Figure 3).

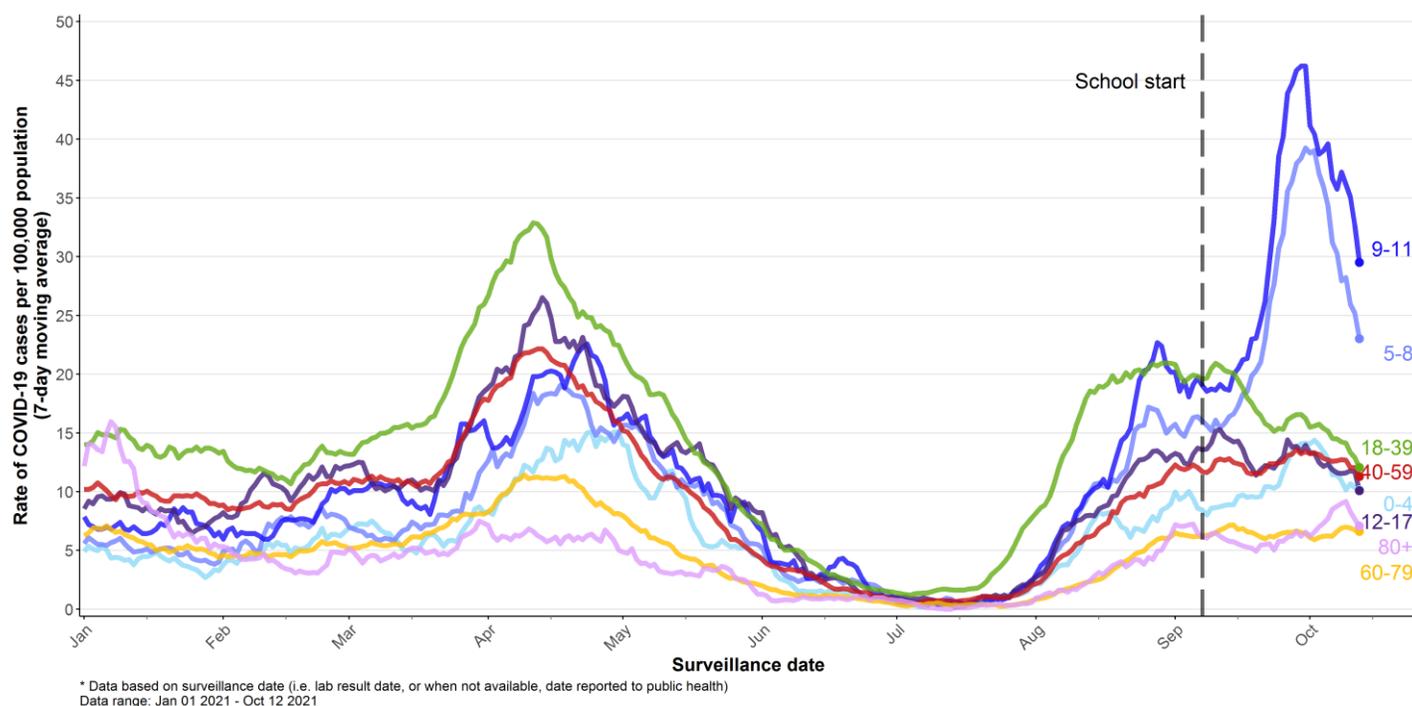
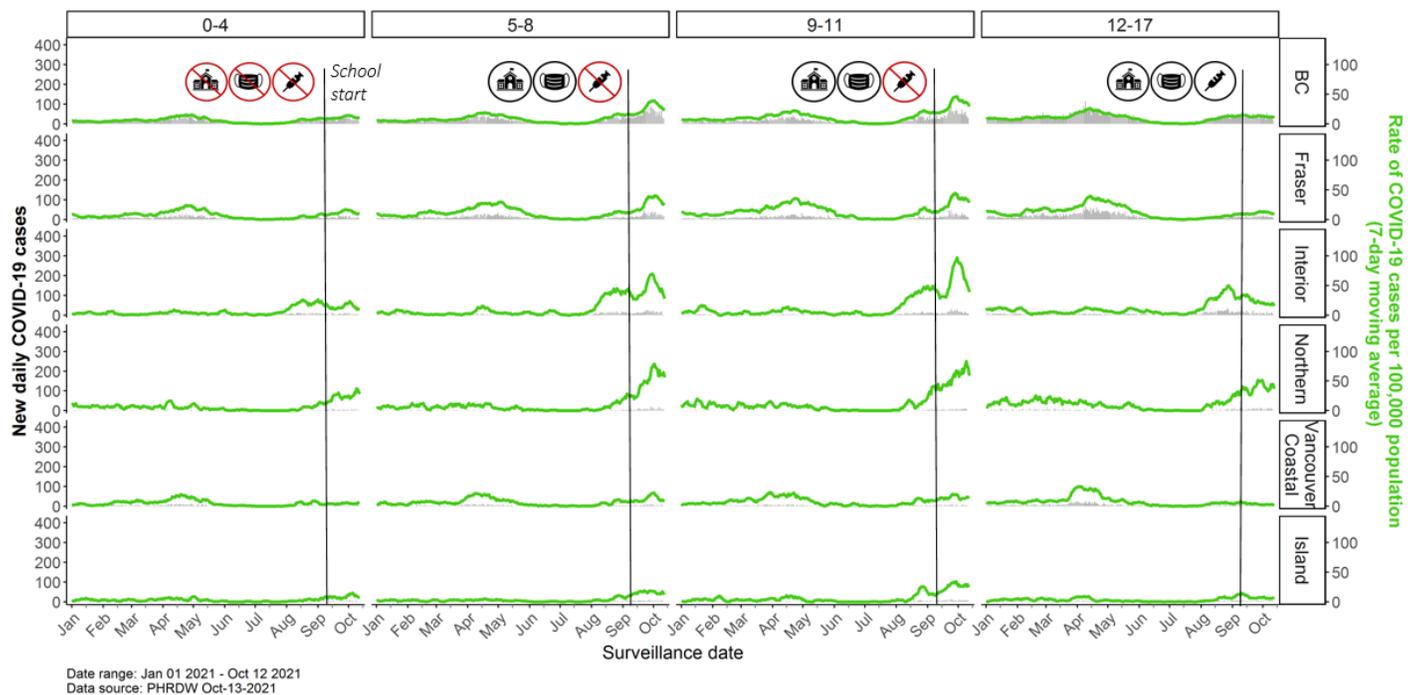


Figure 3: Rate of COVID-19 cases by age group, January 1 to October 12, 2021

Recent changes in case incidence rates among children differ by health authority and age group (Figure 4). Such regional differences reflect community vaccination coverage as well as community prevalence: regions with higher

² **Serious AEFI:** an AEFI that meets one or more of the following criteria: life-threatening, results in hospitalization, prolongation of an existing hospitalization, persistent or significant disability/incapacity, is a congenital anomaly/birth defect, fatal outcome. Any medical event which requires intervention to prevent one of the outcomes listed above may also be considered as serious.

vaccination rates among eligible individuals, such as Vancouver Coastal Health, experience lower case rates among children.



o Note: The mask mandate for K-3 students became effective October 4, 2021.

Figure 4: New daily COVID-19 cases and rates by HA and by age group, January 1 to October 12, 2021

Masking requirements were introduced for K-3 classes (approximately 5-8 years-old) on October 4, 2021, though case incidence rates within these age groups had already started to decline. Masks can provide an added layer of protection against COVID-19 transmission; however, it is difficult to assess the impact of mask wearing among younger grades. There are many factors that contribute to risk of COVID-19 infection, including rates in the community, vaccination coverage, and contact with others through social networks. The fact that rates are higher among 9-11 year-olds does not mean that there is not any benefit to masking, rather it suggests that there are numerous factors related to risk.

Testing Volumes and Positivity

A steep incline in COVID-19 testing began within days of school starting (Figure 5). By the end of September, the testing rate among 5-8 year-olds had quadrupled from four weeks prior, reaching ~600 tests per 100,000 population. This was the highest testing rate of any age group and the highest ever during this pandemic. The increased testing in the pediatric and adolescent populations may be related to [other circulating respiratory viruses](#) causing similar symptoms to COVID-19 that often become more common following the start of school. Test positivity, the percentage of all tests performed that are positive, among 9-11 and 12-17 year-olds has continued to decline.

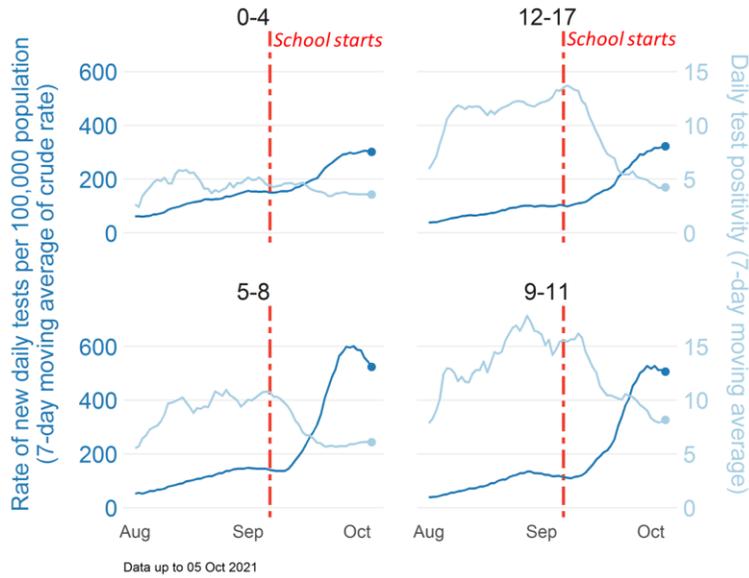


Figure 5: COVID-19 rate of daily testing and test positivity (%) by pediatric age group, August 1 to October 5, 2021

Impact of Vaccination

The effectiveness of COVID-19 vaccines at preventing infection is evident when comparing the case incidence among vaccinated and unvaccinated eligible adolescents. Among 12-17 year-olds, unvaccinated individuals are 24 times more likely to acquire COVID-19 when compared to their two-dose vaccinated counterparts (Figure 6).

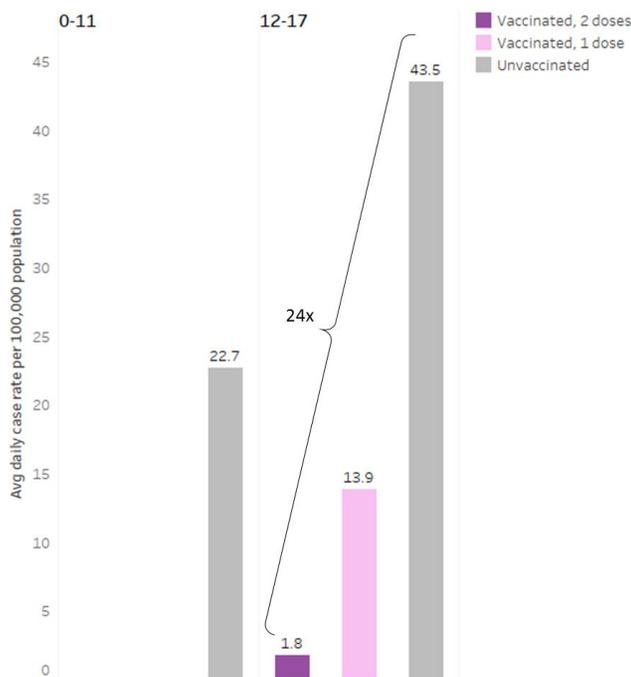


Figure 6: Average daily COVID-19 case rate per 100,000 by pediatric age group and by vaccination status, September 12 to October 11, 2021

D. Severe Outcomes

Hospitalization and Deaths

Most children are at low risk for acquiring COVID-19 and, if they do, they most commonly have mild or no symptoms. Among 5-17 year-olds in BC, there have been 94 hospitalizations, 10 critical care admissions, and no deaths from January 2020 to October 12, 2021. Rising case rates among children in BC since late summer 2021 have not translated into a significant increase in hospitalizations (Figure 7 and Figure 8).

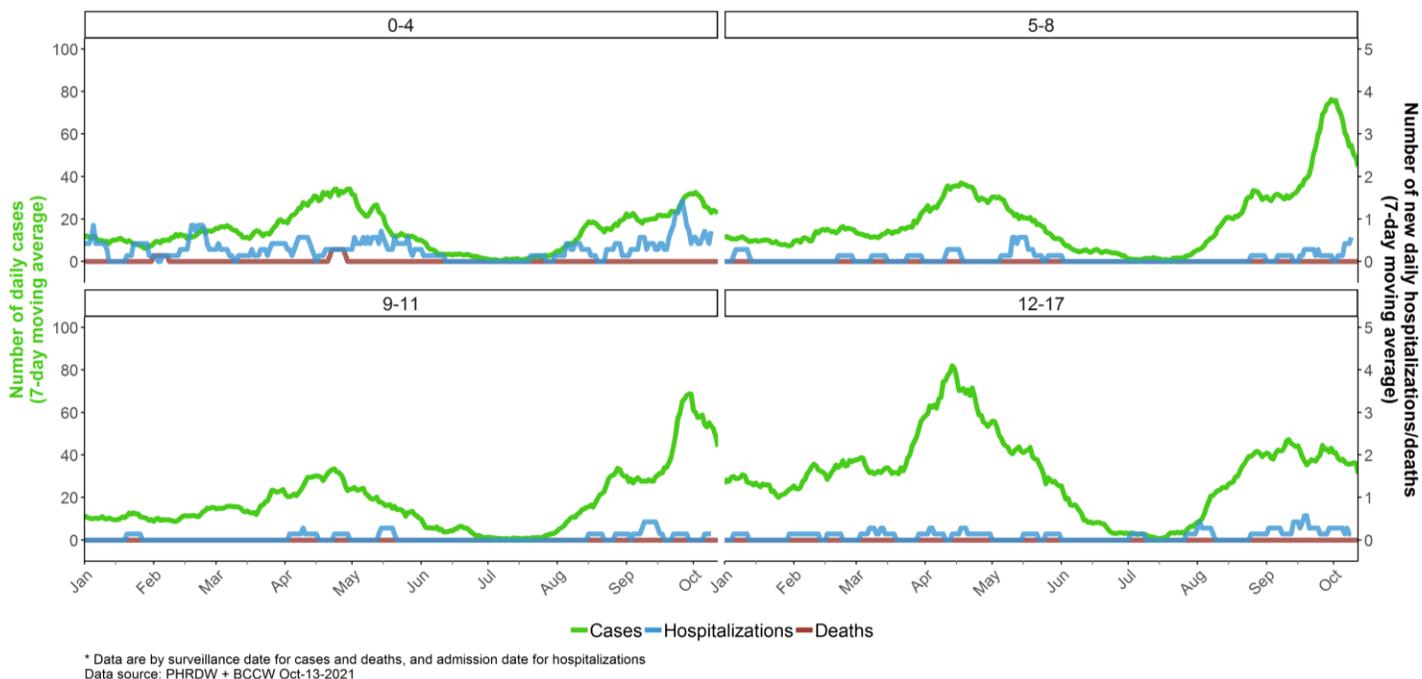


Figure 7: New daily COVID-19 cases, hospitalizations and deaths by pediatric age groups, January 1 to October 12, 2021

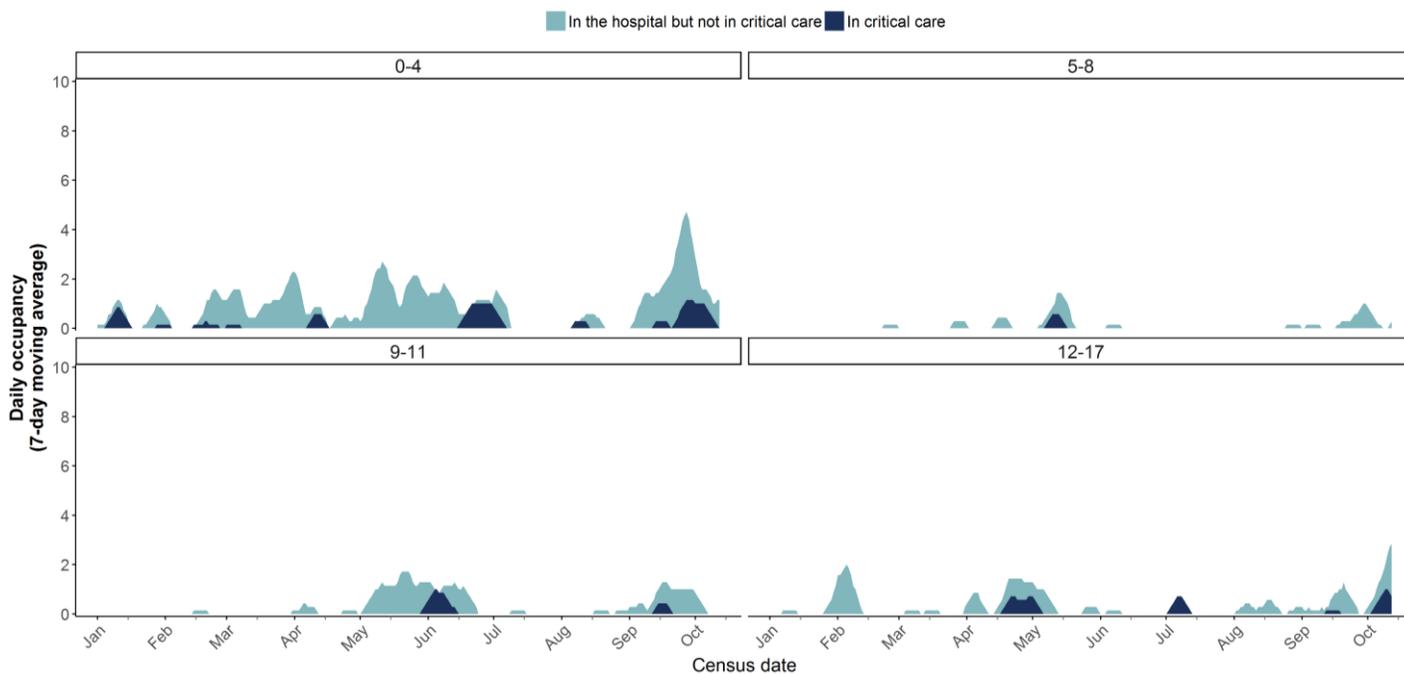


Figure 8: Current COVID-19 hospitalizations by pediatric age groups, January 1 to October 12, 2021

The hospitalization rate for children has remained low and stable throughout the pandemic. Children and youth (0-19 years) have consistently experienced the lowest hospitalization rate of all age groups (Figure 9).

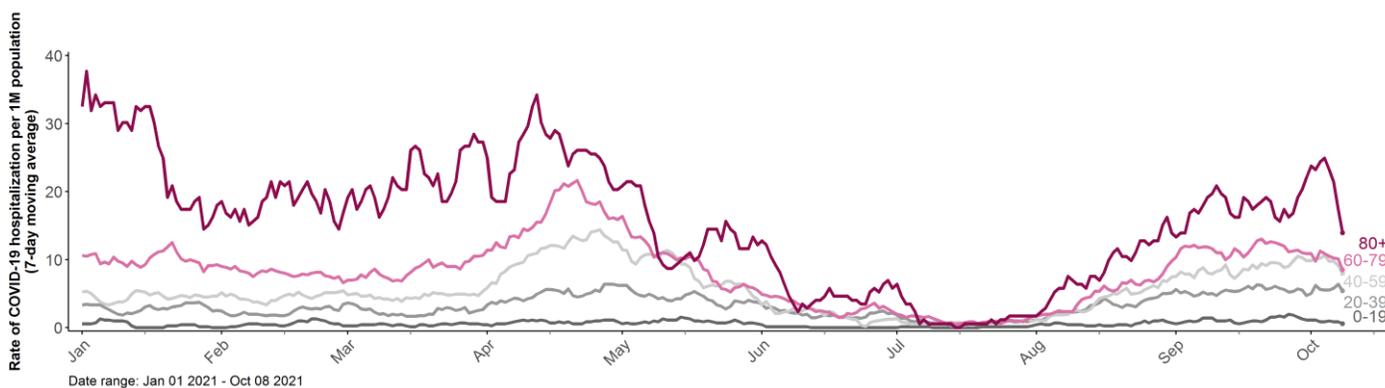


Figure 9: Trends in number and rate of new hospitalizations due to COVID-19 by age group, BC, January 1 to October 8, 2021

A [recent analysis](#) of Canadian data showed an incidental finding of COVID-19 infection is common (~40%) among children admitted to hospital. This means that it is possible that some proportion of hospitalizations among children who are positive for COVID-19 may not be directly due to the infection and children were admitted for other reasons.

Cases and hospitalizations continue to be higher among individuals who are unvaccinated. Within the 12-17 year-old age group, hospitalization is less common among those who are fully vaccinated (0 per 1,000,000 people) compared to those who are unvaccinated (3.3 per 1,000,000 people) (Figure 10).

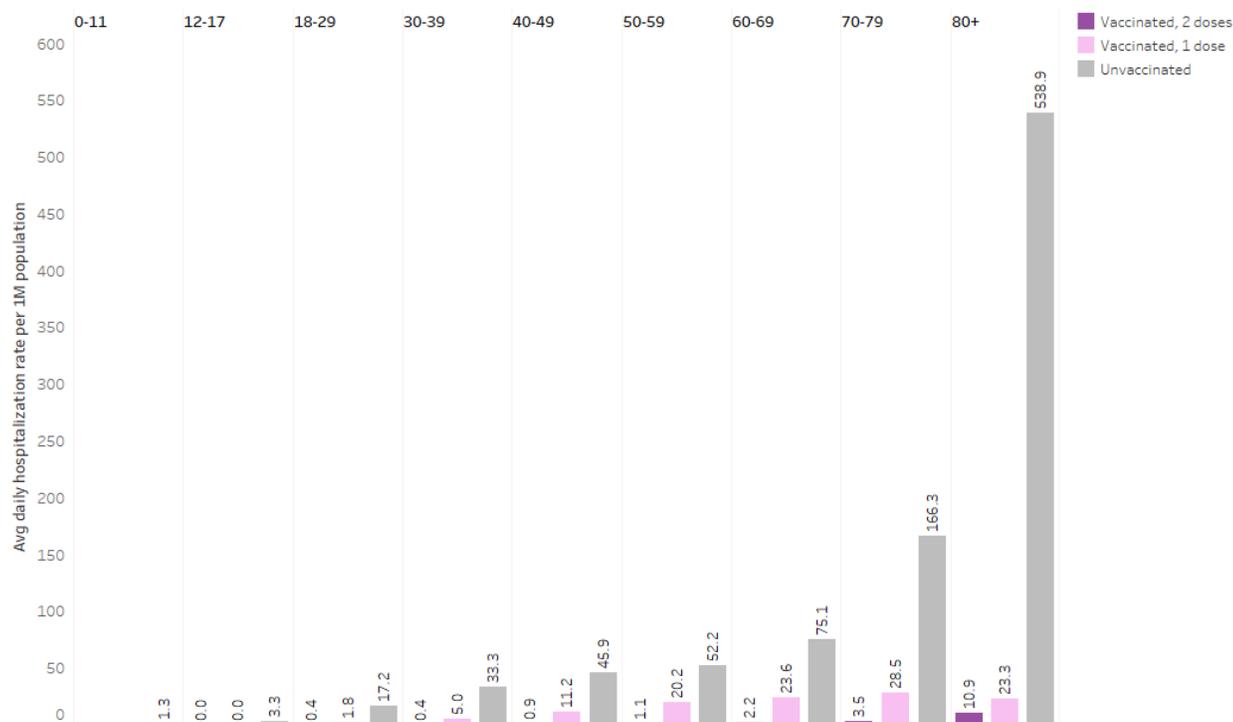


Figure 10: Hospitalization rate of COVID-19 by vaccination status and age group, BC, September 8 to October 7, 2021

Multi-system Inflammatory Syndrome (MIS-C)

Multi-system Inflammatory Syndrome in children and adolescents (MIS-C) is a rare inflammatory syndrome affecting those who have had COVID-19. Cumulatively, there have been 17 confirmed cases of MIS-C in BC from January 1, 2020 to September 25, 2021. The median age of these cases is 8 (range 1-15) years. All cases have recovered or are recovering.

E. Public Notifications of Potential Exposures in K-12 Schools

When a student or staff member of a K-12 school receives a positive COVID-19 test, [public health contact tracing and investigation are triggered](#). If they attended school while infectious and public health staff identify a risk of onward transmission of COVID-19 to the groups they were a part of, regional health authorities will post a notification of a potential exposure to their website. Notification of a potential exposure does not mean disease transmission in the classroom or learning environment has occurred.

As of October 9, 2021, there have been 1,388 [public notifications](#) of potential COVID-19 exposures among 510 K-12 schools³ in BC for the 2021-2022 school year (schools may have had more than one public exposure notifications during this period). This represents 69 (or 20%) of independent schools and 441 (or 29%) of public schools in BC (Table 1). Overall, during this period the percentage of public and independent schools with potential exposure notifications

³ Facility types included: standard, alternate, continuing education; facility types excluded: district distance education, long term Provincial Resource Program, summer school, youth custody.

increased with the case incidence rate (Figure 11).

Table 1: Percentage of public and independent schools with public notifications of potential COVID-19 exposures, September 7 to October 9, 2021

School Type	Schools with public exposure notice	Total number of schools	Percent schools with public exposure notice
Independent	69	343	20.1
Public	441	1519	29.0
Total	510	1862	27.4

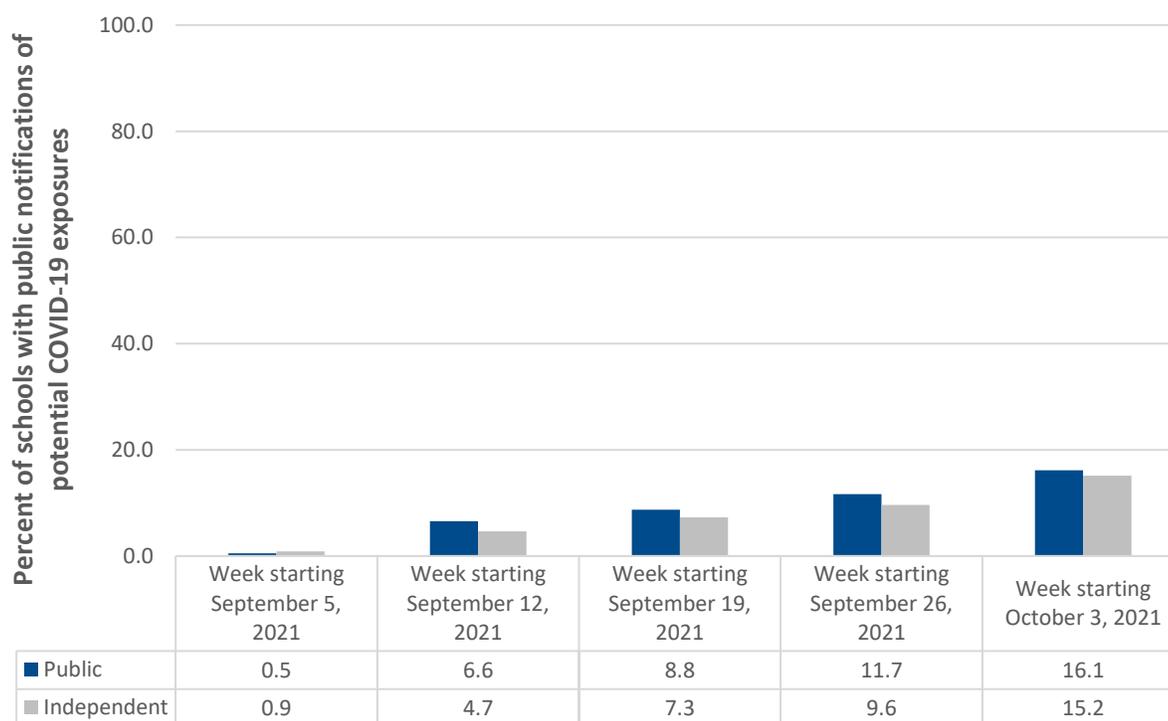


Figure 11: Percentage of BC public and independent schools with public notifications of potential COVID-19 exposures by epi week and school type, September 5 to October 9, 2021

F. Regional Analysis of Interior Health Authority K-12 School COVID-19 Case Clusters

In-depth reviews of COVID-19 cases among students and staff in K-12 schools within regional health authorities can help us understand what transmission looks like in the school setting.

Through review of contact tracing records and linkage to vaccination data, Interior Health looked at the COVID-19 cases reported since the beginning of the 2021-2022 school year among students and staff in K-12 schools. The analysis assessed where the individual may have acquired the virus as well as any transmission that may have occurred in the school setting.

Located in the southern interior of BC, Interior Health is home to a population of over 810,000 in 2020. There are 321 public and 56 independent K-12 schools in the region, serving an estimated school-age (5-17 years) population of 98,959 children.

Throughout late summer 2021, Interior Health had the highest overall COVID-19 case incidence rate in BC, requiring implementation of additional public health measures across the region. As of October 14, 2021, the two-dose vaccination rate in Interior Health for the vaccine-eligible population (age 12 years and older) is 77%, which is lower than the provincial average of 83%. There is also wide variation in two-dose vaccination rate across the region, with the lowest in Enderby (63%) and the highest in Revelstoke (85%).

COVID-19 cases among the school-age pediatric population make up a very small proportion of overall cases in Interior Health. They generally follow community trends and reflect community COVID-19 activity (Figure 12).

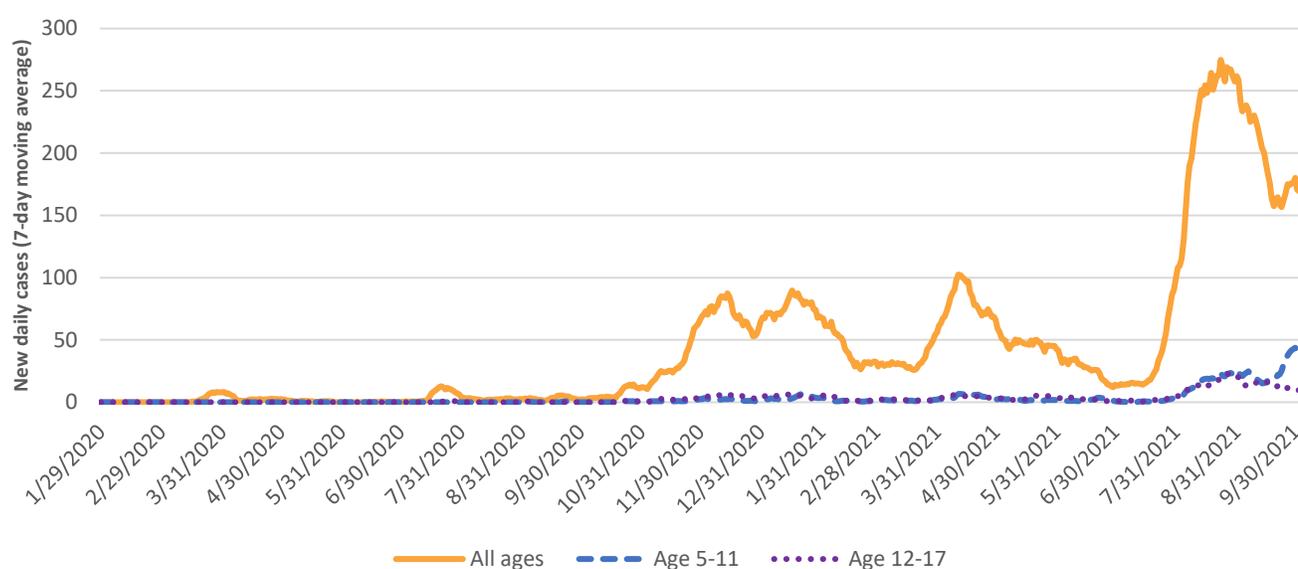


Figure 12: New daily cases of COVID-19 in Interior Health, all and school age (5-17 years), January 1, 2020 to October 6, 2021

Since September 1, 2021, a total of 1,123 reported COVID-19 cases were among people who worked at or attended school⁴ in the Interior Health region. Among those cases who were eligible for vaccination, most were not fully immunized (Table 2).

⁴ K-12 specified or missing school type.

Table 2: Number of cases among people that work at or attend school in Interior Health, by age group and immunization status (% of total within age group), September 1 to October 12, 2021

Vaccination Status	<12 years	12-19 years	Adults (including staff)	Total
Unimmunized	738 (99.9%)	186 (76.9%)	70 (49.3%)	994 (88.5%)
Partially immunized	1 [†] (0.1%)	31 (12.8%)	11 (7.7%)	43 (3.8%)
Fully Immunized	0 (0%)	25 (10.3%)	61 (43%)	86 (7.7%)
Total	739 (100%)	242 (100%)	142 (100%)	1123 (100%)

o Fully Immunized: An individual with ≥14 days* after receiving their second dose of a two-dose COVID19 vaccine series

o Partially Immunized: An individual with ≥21 days* after receiving their first dose of a two-dose COVID-19 vaccine series

o Unimmunized: An individual who is either unvaccinated OR vaccinated and <21 days* since the first dose of COVID-19 vaccine. Individuals <12 years of age are not eligible for immunization at this time.

*Note: The number of days from first and second dose are counted from the date of dose administration to the illness episode date (symptom onset otherwise date reported to public health)

[†]People born in 2009 or earlier are [eligible for COVID-19 vaccination in BC](#). Some in the vaccine eligible age group may not have yet turned 12 years old at the time this report was prepared.

Of all cases reported in Interior Health K-12 schools, 831 (74%) attended school while infectious. This does not necessarily mean that the infection was acquired in a school setting, nor does it mean they transmitted it within a school setting. Further analysis of contact tracing records allows the identification of transmission dynamics and school case clusters.

Notes about school case clusters:

- **School clusters** are defined as two or more cases that were reported within a 14-day period where transmission was likely within the school or where transmission in the classroom setting cannot be ruled out.
 - This means that, where contact tracers could not identify a specific source of transmission, out of an abundance of caution, these cases were considered to have acquired COVID-19 at school.
 - One school may have more than one cluster at any given time.
 - A cluster status transitions from **active** to **closed** when no additional case is linked to the cluster for 14 days after the last reported case.
 - **All the data related to case clusters in this report include cases among both students and staff in the school community.**
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Between September 7 and October 12, 2021, there have been 80 identified COVID-19 clusters in 46 schools in Interior Health. A total of 314 cases were linked to these clusters, representing 28% of the 1,123 COVID-19 cases among K-12 students and school staff in the region during this period. As of October 12, 2021, 50 clusters in 32 schools remained active. Overall, for both active and closed clusters, cluster size ranged from 3 to 11 cases with a median of 3. A median cluster size of 3 cases was consistent between closed and active clusters. No COVID-19 case clusters have been identified among 331 (or 88%) of the 377 schools within Interior Health since the beginning of the 2021-2022 school year (Figure 13).

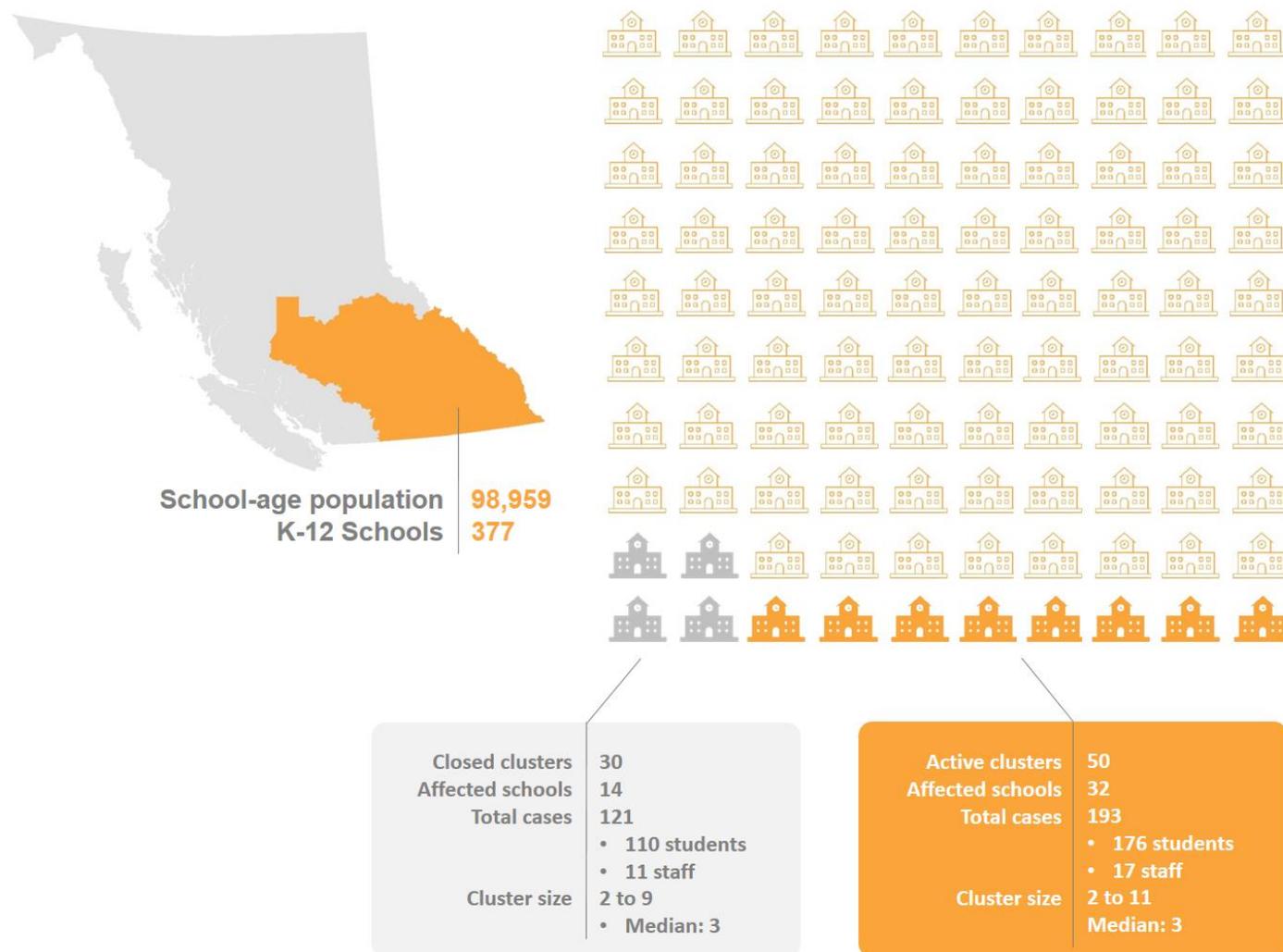


Figure 13: COVID-19 clusters in K-12 schools in the Interior Health Region, September 7 to October 12, 2021

During the previous (2020-2021) school year, Vancouver Coastal Health and Fraser Health both released comprehensive analyses of COVID-19 transmission within K-12 school settings in their regions.

- By analyzing K-12 school cases reported between September 10 and December 18, 2020, [Vancouver Coastal Health](#) identified 26 school case clusters with evidence of school-based transmission with a median cluster size of 2.5 cases.
- Similarly, the analysis of K-12 school cases reported between January 1 and March 7, 2021 by [Fraser Health](#) identified 115 school case clusters with a median cluster size of 2 cases.
- Both the Vancouver Coastal Health and Fraser Health regional analyses were conducted before the Delta variant was circulating widely in BC.

In summary, COVID-19 cases within schools make up a small proportion of overall cases in Interior Health. Among the cases reported in K-12 schools who were eligible for vaccination, most were not fully immunized. Most of the K-12 school clusters reported in the region during the first five weeks of the 2021-2022 school year were slightly larger than the median cluster size reported in the previous school year by Vancouver Coastal Health and Fraser Health and involved a median of 3 cases. A provincial K-12 school cluster reporting system is currently under development, and data are expected to be available in subsequent reports.

G. Data Sources and Notes

Data sources include: HA case line list data, laboratory PLOVER data, PHSA Provincial Immunization Registry (PIR), Ministry of Health Immunization Population Coverage Report, hospital data PHSA Provincial COVID-19 Monitoring Solution (PCMS), Panorama, and the Ministry of Health's Health Sector Information, Analysis and Reporting (HSIAR) vaccine coverage data.

Daily cases are reported by surveillance date. For epi-linked cases, this is the date it was reported to public health. For all lab-confirmed cases, the lab result date is used. If a lab result date is not available, then the date the case was reported to public health is used.

Population estimates for case incidence, hospitalization, and death rates are from PEOPLE 2020.

Vaccination coverage is estimated using the Client Roster for the denominator as of March 12, 2021. Age is calculated as age as of December 31, 2021.

Laboratory data include Medical Service Plan (MSP) funded (e.g. clinical diagnostic tests) and non-MSP funded specimens (e.g. screening tests).

Public exposure notifications data were provided by the BC Ministry of Education.

Data may be corrected over time as additional data flow into the system.

Data for the regional analysis was generated by staff of the Interior Health Epidemiology and Surveillance Unit and Communicable Disease Unit Schools Team.

H. Additional Resources

Case Definitions

[COVID-19 Case Definition](#)

K-12 School Guidance

[Public Health Communicable Disease Guidance for K-12 Schools](#)

Provincial COVID-19 Dashboards

[BCCDC COVID-19 Dashboard](#) – Daily provincial and health authority level reporting of case incidence, death, hospitalization and laboratory data.

[BCCDC Regional Surveillance Dashboard](#) – Regional reporting of case and vaccine data.

[BCCDC COVID-19 Epi App](#) – Case incidence, death, hospitalization, laboratory and limited vaccine data for regional and global comparisons